

LISTING OF THE CLAIMS

The following claim listing will replace all prior versions, and listings, of claims in this application.

1-43. (Canceled)

44. (Previously presented) A method for generating a herbicide-resistant transgenic soybean plant comprising:

introducing into a soybean somatic embryogenic culture a DHPS-encoding polynucleotide comprising the sequence represented by SEQ ID NO: 1 and encoding a functional dihydrodipicolinate synthase (DHPS) polypeptide, operably linked to an expression control sequence, wherein DHPS expressed from the introduced DHPS-encoding polynucleotide is effective to render an embryo resistant to selection-effective amounts of S-2-aminoethylcysteine (2-AEC), and to render the plant resistant to herbicide-effective amounts of AEC, and contacting the embryo with selection effective amounts of 2-AEC.

45-64. (Canceled)

65. (Previously presented) The method of claim 44, wherein the expression-control sequence to which the DHPS-encoding polynucleotide is operably linked is a first expression control sequence.

66. (Previously presented) The method of claim 65, further comprising introducing a polynucleotide encoding a heterologous polypeptide of interest, operably linked to a second expression control sequence wherein the first and second polynucleotides and their expression control sequences may be the same or different.

67. (Previously presented) The method of claim 66, wherein the DHPS-encoding polynucleotide and/or the polypeptide of interest-encoding polynucleotide are stably integrated into the genome.

68. (Previously presented) The method of claim 66, wherein the polynucleotide encoding the DHPS polypeptide and the polynucleotide encoding the polypeptide of interest are on the same molecule.

69. (Previously presented) The method of claim 66, wherein the polynucleotide encoding the DHPS polypeptide, operably linked to the first expression control sequence, and the polynucleotide encoding the polypeptide of interest, operably linked to the second expression control sequence, are on separate molecules.

70. (Previously presented) The method of claim 65, wherein the first expression control sequence is a constitutive promoter.

71. (Previously presented) The method of claim 65, wherein the first expression control sequence comprises a cauliflower mosaic virus CaMV 35S promoter or a ribosomal RNA promoter.

72. (Previously presented) The method of claim 66, wherein the second expression control sequence is a seed-specific promoter.

73. (Previously presented) The method of claim 66, wherein the second expression control sequence comprises a glycinin, phaseolin, conglycinin, seed lectin, napin, zein or other seed-specific promoter.

74. (Previously presented) The method of claim 65, wherein the sequence encoding the functional DHPS polypeptide is upstream of the sequence encoding the polypeptide of interest.

75. (Previously presented) The method of claim 65, wherein the sequence encoding the functional DHPS polypeptide is downstream of the sequence encoding the polypeptide of interest.

76. (Previously presented) The method of claim 66, wherein the heterologous polypeptide of interest is selected from the group consisting of omega-3 desaturase; a polypeptide for improved amino acid compositions; a polypeptide imparting resistance to a bacterium, a fungus, a virus, an insect, or a nematode; a herbicide resistance polypeptide; a polypeptide affecting soybean composition or quality; a nutrient utilization polypeptide; an environmental or stress resistance polypeptide; and a drought resistance polypeptide.

77. (Previously presented) The method of claim 66, wherein the polypeptide of interest is phosphinothricin acetyltransferase, glyphosate resistant EPSPS, aminoglycoside phosphotransferase, dalapon dehalogenase, bromoxynil resistant nitrilase, anthranilate synthase and glyphosate oxidoreductase.

78. (Previously presented) The method of claim 66, wherein the polypeptide of interest is a lysophosphatidate acyl transferase (LPAT).

79. (Previously presented) The method of claim 66, wherein the polypeptide of interest is a diacylglycerol acyltransferase (DGAT).

80. (Previously presented) The method of claim 66, wherein the polypeptide of interest provides increased oil content in the soybean.

81. (Previously presented) The method of claim 66, wherein the polypeptide of interest is delta-9 desaturase.

82. (Previously presented) The method of claim 81, wherein expression of the delta-9 desaturase activity results in a decreased saturated fatty acid contents in the soybean plant.

83. (Previously presented) The method of claim 82, wherein the decreased fatty acid content results in palmitoleic acid accumulation in the soybean plant.

84. (Previously presented) The method of claim 66, wherein the polypeptide of interest is delta-12 desaturase.

85. (Previously presented) The method of claim 84, wherein expression of the delta-12 desaturase results in high oleic acid content soybean oil.

86. (Previously presented) The method of claim 85, wherein the polypeptide of interest is a functional DHPS expressible in soybean plant and seed.

87. (Previously presented) The method of claim 86, wherein the polypeptide of interest is the same as the DHPS-encoding sequence.

88. (Currently amended) The method of claim 44, ~~wherein~~ wherein a 3' terminator sequence is located 3' to the DHPS-encoding sequence.

89. (Previously presented) The method of claim 88, wherein the 3' terminator sequence is a pea RUBISCO 3' controlling sequence, a ribosomal RNA terminator, or a 3' transcription region for the nopaline synthase (NOS) gene.

90. (Previously presented) The method of claim 66, wherein one or both of the sequence encoding the functional DHPS polypeptide and the sequence encoding the heterologous polypeptide of interest is operably linked to two or more expression control sequences.

91. (Previously presented) The method of claim 66, wherein the transgenic soybean plant is backcrossed so as to generate a transgenic soybean plant which is homozygous for the sequence encoding the heterologous polypeptide of interest.

92. (Previously presented) The method of claim 44, further comprising backcrossing the transgenic soybean plant to generate a transgenic soybean plant which is homozygous for the sequence encoding the DHPS polypeptide.

93. (Previously presented) The method of claim 44, wherein the transgenic plant is fertile.

94-98. (Canceled)

99. (Previously presented) The method of claim 44, wherein the embryo is contacted with a concentration of 2-AEC from about 0.1 to about 20 mM.

100. (Previously presented) The method of claim 44, wherein the embryo is contacted with a concentration of 2-AEC from about 1 to about 2.5 mM.

101-111. (Canceled)